

# Marine Physical Laboratory

AD-A280 832



## SSE and Spinnaker Experiment Support

William S. Hodgkins

Final Report to the  
Office of Naval Research  
Contract N00014-89-D-0142 (D0435)  
for the Period 2-2-93 - 1-31-94

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MPL-U-30/94  
March 1994

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Scripps Institution of Oceanography

94-19801



DTIC QUALITY INSPECTED 1

# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. Agency Use Only (Leave Blank).		2. Report Date. March 1994		3. Report Type and Dates Covered. Final Report	
4. Title and Subtitle. SSE and Spinnaker Experiment Support				5. Funding Numbers. N00014-89-D-0142 (DO#35)	
6. Author(s). W. S. Hodgkiss				Project No. Task No.	
7. Performing Monitoring Agency Name(s) and Address(es). University of California, San Diego Marine Physical Laboratory Scripps Institution of Oceanography San Diego, California 92152				8. Performing Organization Report Number. MPL-U-30/94	
9. Sponsoring/Monitoring Agency Name(s) and Address(es). Office of Naval Research Department of the Navy 800 North Quincy Street Arlington, VA 22217-5660 Code 1225				10. Sponsoring/Monitoring Agency Report Number.	
11. Supplementary Notes.					
12a. Distribution/Availability Statement. Approved for public release; distribution is unlimited.				12b. Distribution Code.	
13. Abstract (Maximum 200 words). The objective of this program was to assist NRaD in the planning and execution of two experiments off the coast of southern California in the shallow water test bed region bounded by Point Loma (San Diego), San Clemente Island, and Camp Pendleton.					
14. Subject Terms. vertical line array, data recording system, horizontal planar array				15. Number of Pages. 2	
				16. Price Code.	
17. Security Classification of Report. Unclassified	18. Security Classification of This Page. Unclassified	19. Security Classification of Abstract. Unclassified		20. Limitation of Abstract. None	

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## ***Abstract***

The objective of this program was to assist NRaD in the planning and execution of two experiments off the coast of southern California in the shallow water test bed region bounded by Point Loma (San Diego), San Clemente Island, and Camp Pendleton.

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## ***Research Summary***

The first, SWellEx-1 (Shallow Water evaluation cell Experiment #1), was carried out in August 1993 west of Point Loma in approximately 200 m water [1]. During SWellEx-1, two hydrophone arrays were deployed. The first was a MPL 48-element vertical array deployed from the R/P FLIP. The second was a McDonnell-Douglas 8x8-element horizontal planar array deployed on the seafloor and cabled back to FLIP for data recording. SWellEx-2 (also known as the Site Specific Experiment or SSE) was carried out in September 1993 adjacent to San Clemente Island in both 450 m and 1200 m water [2]. During SWellEx-2, two hydrophone arrays also were deployed. The first was the NRaD SSE (Site Specific Experiment) engineering test array which was cabled back to San Clemente. The second was a MPL 64-element vertical array deployed from the R/P FLIP.

Both of these experiments involved similar efforts. Prior to each experiment, there were several experiment planning meetings with all participants. In SWellEx-1, the participants included MPL, NRaD, NRL, NAWC, McDonnell-Douglas, Western Instruments, PAI, and Lockheed. In SWellEx-2, the participants included MPL, NRaD, NOAA, PAI, and Lockheed. During each experiment, MPL personnel were involved in the deployment of arrays, surveying transponders used for acoustic array element localization (AEL), real-time data recording, quick-look analysis, and source tow operations. Then, at the conclusion of each experiment, MPL personnel were involved in collecting together all experiment logs and making copies of data tapes.

Included as part of the preparation for SWellEx-2, MPL designed and implemented the data recording system for the NRaD SSE array. This hardware served as a prototype for the recording system being developed for Project Spinnaker.

### ***Publications***

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1. "SWellEx-1 Test Plan," NRaD/NCCOSC (August 1993).
2. "SWellEx-2 Experiment Plan," NRaD/NCCOSC (September 1993).

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